IN THE CLAIMS:

Please cancel claims 1-12, without prejudice, and add new claims 13-24 as follows.

Claims 1-12. (Cancelled).

13. (New) A computer-implemented method for determining cluster centres in a first data structure, wherein the first data structure comprises a lattice structure of weight vectors that create an approximate representation of a plurality of input data points;

the method comprising:

performing a first iterative process for iteratively updating the weight vectors such that they move toward cluster centres;

performing a second iterative process for iteratively updating a second data structure utilizing results of the iterative updating of the first data structure; and

determining, on the basis of the second data structure, the weight vectors that correspond to cluster centres of the input data points.

14. (New) A method according to claim 13, wherein each iteration in the first iterative process comprises:

selecting a winner weight vector for each data point on the basis of the distance between the data point and the weight vectors; and

calculating a next value for each weight vector on the basis of the current value of the weight vector and a first neighbourhood function of the distance on the lattice structure between the weight vector and the winner weight vector; and

the second data structure comprises a first coefficient for each of the weight vectors in the lattice structure and each iteration in the second iterative process comprises calculating a next value of each first coefficient on the basis of:

the current value of the first coefficient; and a combination of:

a first coefficient of the winner weight vector,

a second neighbourhood function of the distance on the lattice structure between the weight vector and the winner weight vector, and

an adjustment factor for adjusting convergence speed between iterations.

15. (New) A method according to claim 13, wherein the step of determining the weight vectors that correspond to cluster centres comprises selecting local maxima in the second data structure.

16. (New) A method according to claim 14, wherein the combination is or comprises multiplication.

17. (New) A method according claim 14, wherein the second neighbourhood function is not monotonous.

18. (New) A method according to claim 14, wherein the first coefficients are limited to a range [0,1] and the second neighbourhood function gives negative or positive values, respectively, for some distances.

19. (New) A method according to claim 14, wherein the second neighbourhood function depends on the number of prior iterations.

20. (New) A method according to claim 13, wherein the input data points represent real-world quantities.

21. (New) A method according to claim 14, wherein the first data structure is or comprises a self-organizing map.

22. (New) A method according to claim 21, further comprising:

estimating an upper limit K for the number of clusters in the self-organizing map;

defining a coefficient vector $\Theta i = (\theta_{i,1}, \theta_{i,2}, \ldots \theta_{i,K})$ for each weight vector i in the self-organizing map, the coefficient vector comprising K second coefficients $\theta_{i,l}$, each of which represents a weighting between the weight vector i and a label l; and

assigning cluster label l to weight vector i if:

$l = arg\ max\ \theta_{i,k}$.

$$1 \leq k \leq K$$

23. (New) A method according to claim 22, wherein each iteration in the second iterative process comprises calculating a next value of each second coefficient on the basis of the current value of the second coefficient and a combination of:

a coefficient of the winner weight vector,

a third neighbourhood function of distance, and

an adjustment factor for adjusting convergence speed between iterations.

24. (New) A computer-readable program product comprising a computer program code, wherein executing the computer program code in a computer causes the computer to carry out the steps of the method according to claim 13.